SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION
50 California Street • Suite 2600 • San Francisco, California 94111 • (415) 352-3600 • FAX: (415) 352-3606 • www.bcdc.ca.gov

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TO: Commissioners and Alternates

FROM: Will Travis, Executive Director (415/352-3653 travis@bcdc.ca.gov)
Ruby Pap, NOAA Coastal Management Fellow (415/352-3667 rubyp@bcdc.ca.gov)

SUBJECT: **Staff Report and Recommendation on the Bay Marina Water Quality Project**
(For Commission consideration on August 19, 2004)

Summary and Recommendations

Based on the results of a two-year literature review and pilot study on marina water and sediment quality in San Francisco Bay marinas, the staff recommends that the Commission make no changes in the *San Francisco Bay Plan* recreational boat marina water quality policies at this time. The staff further recommends that, to the degree resources are available, the Commission continue to participate in marina and recreational boating nonpoint source pollution programs, support research that monitors water and sediment quality in marinas, and support marina and boater education programs.

Staff Report

Because recreational boat marinas are semi-enclosed water bodies and marina and recreational boating operations have the potential of introducing pollutants into the Bay, there has long been a concern that marinas could pose significant water and sediment quality problems in the Bay. For example, marina and boating operations can contribute pollutants such as heavy metals from boat hull paints and plating accessories, engine components, engine oils, and wood treatments in pilings and docks; and petroleum hydrocarbons from fueling, oil spills, oily bilge water discharges, and fuel combustion from outboard motors. The presence of these chemicals in the Bay can have a variety of adverse impacts on marine life, such as reproductive abnormalities, tumor formations, mutations, and growth abnormalities.

There have been few water or sediment quality studies conducted in Bay marinas. Therefore, with the support of the San Francisco Regional Water Quality Control Board, the California State Water Resources Control Board, and the marina and recreational boating community, the Commission entered into a partnership with the National Oceanic and Atmospheric Administration (NOAA) to determine whether marina and recreational boating operations pose a significant Bay water quality problem and to determine what steps, if any, to take to address this issue. The Commission retained the services of Moss Landing Marine Laboratories to provide sediment and water quality testing and analysis needed for the study.

NOAA assigned Ruby Pap, a NOAA Coastal Management Fellow, to conduct the San Francisco Bay Marina Water Quality Project. She worked closely with the Commission's staff, water quality experts, other government agencies, marina representatives, the recreational boating community, and environmental non-government organizations. The project reviewed the research and literature on water and sediment quality in marinas, and sampled sediment and measured general water quality parameters at four carefully selected San Francisco Bay marinas: Berkeley Marina, Loch Lomond Marina in San Rafael, Ballena Isle Marina in Alameda, and Corinthian Yacht Club in Tiburon.

The project results indicate that there are elevated levels of pollutants such as copper, chromium, zinc, and arsenic, in some of the marinas. Pollutant levels were not found to be extremely risky to aquatic life. However, to prevent the pollutants from accumulating in marinas and increasing to higher risk levels, the report recommends that marinas, boaters, regulatory authorities, and educational programs continue to promote and implement management practices to prevent and minimize discharges of contaminants into the Bay at marinas, such as controlling runoff from marina parking lots, maintenance areas, and other paved areas, and using non-toxic anti-fouling bottom coatings and companion strategies for boats. Additionally, continued water and sediment quality monitoring is recommended to increase understanding of the sources and impacts of pollution in San Francisco Bay marinas.

Existing pollution prevention programs are helping to control the introduction of marina and recreational boating- related pollutants into San Francisco Bay. The educational programs of the California Coastal Commission, the California Department of Boating and Waterways, the University of California Cooperative Extension/California Sea Grant Extension Program, and others have been helpful in providing pollution control information and methods to marina operators and the recreational boating public. State and regional forums, such as the California Clean Boating Network and BCDC's San Francisco Bay Marinas and Recreational Boating Nonpoint Source Task Force have provided pollution prevention information sharing opportunities. California agencies charged with preventing marina and recreational boating pollution, including BCDC, are working together on marina and recreational boating pollution issues through forums such as the Inter Agency Coordinating Committee. Finally, BCDC's nonpoint source water quality policies requiring projects to implement management practices help prevent pollution in the Bay.

The project concluded there is no reason for the Commission to amend the *San Francisco Bay Plan* marina related water quality policies at this time. However, the project report recommends that the Commission should continue to require marinas to use management practices and continue to collaborate with the Regional Board, the marina and recreational boating community, and other relevant organizations on appropriate management practices to control pollution at marinas. The report also recommends that the Commission encourage additional research to gain a better understanding of the sources and pathways of pollutants in Bay marinas and the extent of their impacts on marine life. Finally, the project recommends that the Commission continue, to the degree it has funding and staff, to collaborate with water quality monitoring efforts, nonpoint source pollution programs, and the boating community to advance voluntary marina water quality monitoring programs and clean marina and boating education programs.